

# The Hidden Benefits of Producing in the U.S.

SelectUSA Summer Forum:  
*Reinvesting in America, Creating Jobs at Home*  
June 17, 2014

Dr. Susan Helper  
Chief Economist



# Agenda

- Many benefits of US location are hidden by conventional analysis
- Much great work being done to improve.  
Examples:
  - “Assess Costs Everywhere” ([acetool.commerce.gov](http://acetool.commerce.gov))
  - Valuing Lead Time Reduction (de Treville)
  - Reshoring Initiative ([reshorenow.org](http://reshorenow.org))
  - Manufacturing Extension Program Total Cost of Ownership

# acetool.commerce.gov

UNITED STATES DEPARTMENT OF COMMERCE

 **ASSESS COSTS EVERYWHERE**

SEARCH

Home Case Studies Toolbox About ACE Federal Resources

## Consider All the Advantages of Manufacturing or Sourcing in the U.S.A.

**Assess Costs Everywhere (ACE)** provides manufacturers with the top reasons for investing and sourcing in the United States. With its analytic framework, links to public and private **resources**, and **case studies**, ACE is now available to help businesses assess *total* costs more accurately and enable informed decision-making.



The infographic features a central circular logo with the text 'ASSESS COSTS EVERYWHERE' and an American flag motif. Surrounding this logo are nine circular icons, each representing a different cost category. Lines connect these icons to the central logo, indicating their contribution to the overall assessment. The categories are: Labor Costs (represented by three stylized human figures), Inventory (represented by a barcode and a magnifying glass over the number 2), Other Inputs (represented by a factory), Travel (represented by an airplane), Trade Financing Costs (represented by a dollar sign), Intellectual Property (represented by a document with a padlock), Shipping (represented by a cargo ship), Product Quality (represented by a magnifying glass over the word 'quality'), Regulatory Compliance Costs (represented by a clipboard with a checkmark), and Political & Security Risks (represented by a shield).

- Labor Costs
- Inventory
- Other Inputs
- Travel
- Trade Financing Costs
- Intellectual Property
- Shipping
- Product Quality
- Regulatory Compliance Costs
- Political & Security Risks



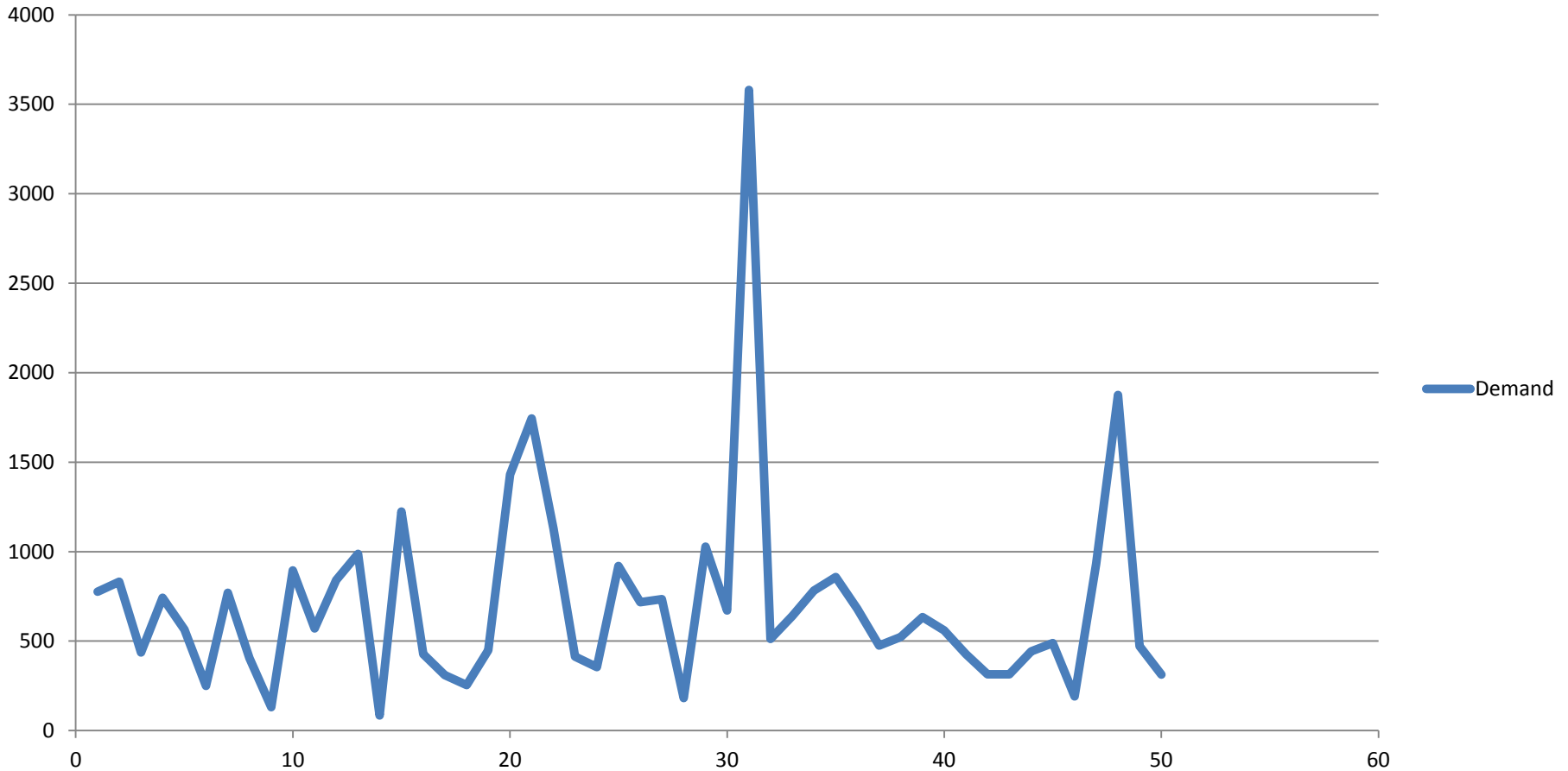


- Because customer demand often fluctuates unexpectedly, companies should carefully consider the value of a **domestic supply chain with shorter lead times**.
- Using offshore suppliers increases the time between order and delivery, often to many weeks. As a result, the buyer must place the order based on a forecast, rather than having the manufacturer produce to order.
- As the lead time gets longer, the range of demand levels that must be considered becomes wider. These fluctuations lead to costly stock outs or overstocks.
- The cost savings from offshoring may need to be large (> 20%) to make up for these costs of “mismatch” between supply and demand.

# Example: Saris bike racks

- Saris makes bicycle racks in Wisconsin. They re-shored much of their supply base, which reduced their lead time, which reduced the need to carry inventory to handle unexpected spikes in demand, which reduced their costs.
  - Many of the company's products are sold to large retailers like Target. The order comes Tuesday and must be filled by Friday. Demand for products can vary by up to a factor of 20. If they have extra stock, its salvage value is much lower than what Target pays.
  - Conversely, when Saris had an overseas parts suppliers and demand for low-end models surged, the parts inventory could not be quickly increased, and Saris was not able to take advantage of the demand.
- *Source:* de Treville and Krishnamurthy, 2014

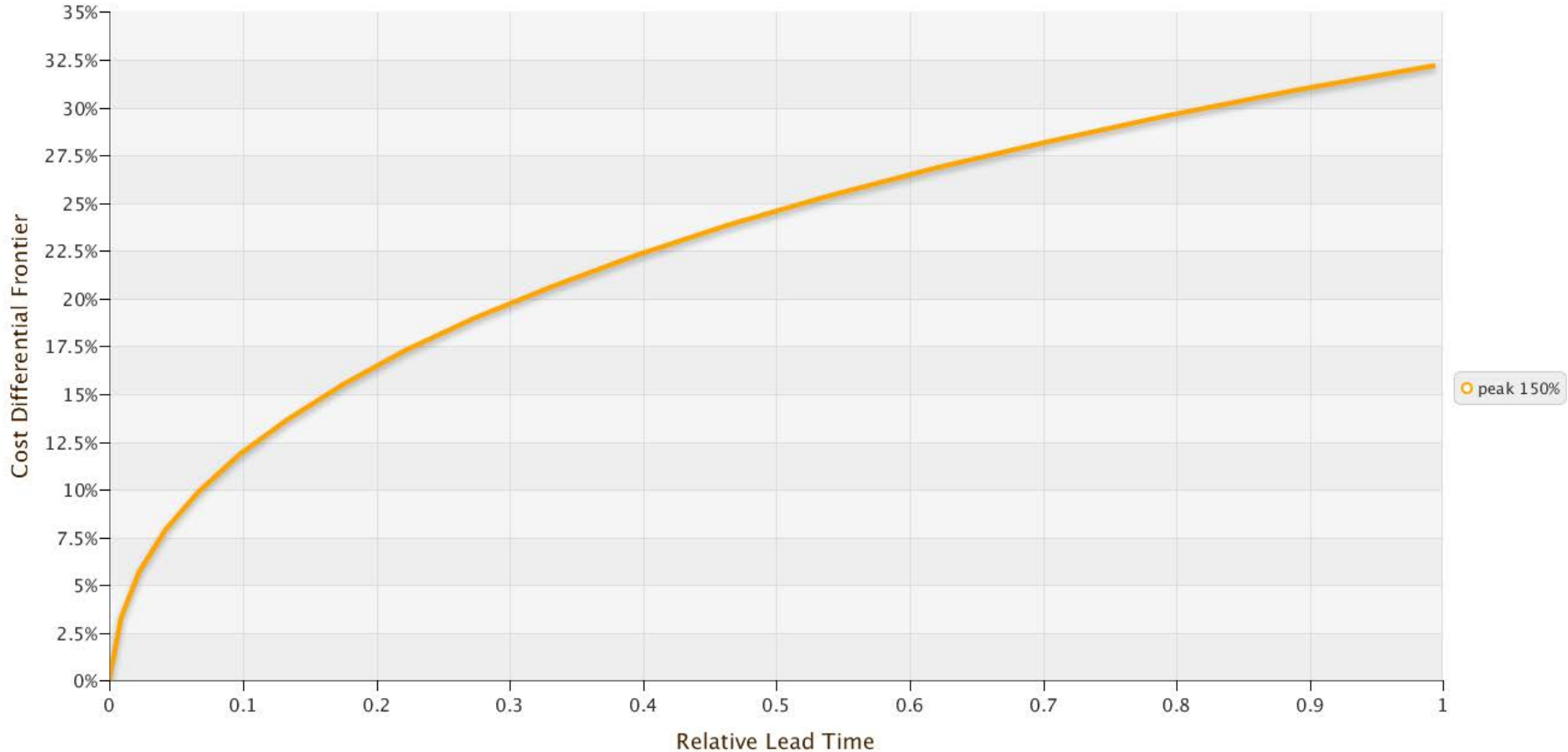
### Demand with modest (63%) volatility



Median demand is 500 units per week; once per month demand spikes to about 750

If lead time = 1, price = \$230, and salvage = \$45, the optimal strategy is to produce 1000 units per week – twice as much as needed, and still there are stockouts

## Cost differential frontier



If relative lead time = 1 (as opposed to producing to order), an offshore supplier must be 32.5% cheaper



# Total Cost of Ownership Estimator



**Reshoring Initiative**®

*Bringing Manufacturing Back Home*

# MEP Total Cost of Ownership Calculator

## Total Cost of Ownership Calculator Main Menu

TCO Input | TCO Output | DataBase Record Editor | Data Collection Sheet | TCO Input Form | About

### *Data Input*

*Product Info*

*Financial Info*

*Inventory Info*

*Add'l/Misc Info*

*Dimensions*

*Transportation Info*

*Expediting Info*

*Vendor Info*

*Oversight Info*

*Risk Mitigation Info*

**Save File to Disk**

**Exit Calculator**

# What factors make re-shoring attractive?

- Unexpected spikes in demand + ‘spoilage’
- Product mix includes low-volatility products
- Skilled workers and engineers take advantage of their proximity to redesign product/process
- Firm uses “agile manufacturing”
  - Skilled workers both set up and run machines, debug new products; IT schedules plant; marketing drives demand for variation, short lead time
- *These factors not confined to particular industries*